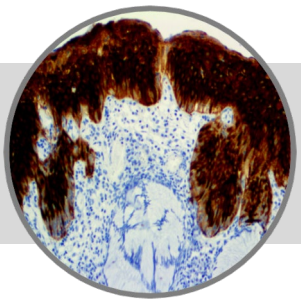
HSP-27

Clone: G3.1

Mouse Monoclonal



CE IVD

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Inset: IHC of HSP-27 on a FFPE HSIL Cervix Cancer Tissue

Intended Use

For In Vitro Diagnostic Use.

This antibody is intended for use in Immunohistochemical applications on formalin-fixed paraffin-embedded tissues (FFPE), frozen tissue sections and cell preparations. Interpretation of results should be performed by a qualified medical professional.

Immunogen

Partially purified human HSP27.

Summary and Explanation

Heat shock protein 27 (HSP27) also known as heat shock protein beta-1 (HSPB1) is a protein that in humans is encoded by the HSPB1 gene. The common functions of sHsps are chaperone activity, thermotolerance, inhibition of apoptosis, regulation of cell development, and cell differentiation. They also take part in signal transduction. HSP27 appears in many cell types, especially all types of muscle cells. It is located mainly in the cytosol, but also in the perinuclear region, endoplasmic reticulum, and nucleus. It is overexpressed during different stages of cell differentiation and development. This suggests an essential role for HSP27 in the differentiation of tissues.

An affinity of high expression levels of different phosphorylated HSP27 species and muscle/neurodegenerative diseases and various cancers has been observed. High levels of HSP27 were also found in sera of breast cancer patients; therefore HSP27 could be a potential diagnostic marker. Phosphorylated Hsp27 has been shown to increase in human prostate cancer (PCa) cell invasion, enhancing cell proliferation, and suppression of Fas-induced apoptosis in human PCa cells.

HSP27 immunohistochemistry is a useful tool for the identification of CIN and cervical squamous cell carcinoma and is a good complement to p16. HSP27 has been demonstrated to be overexpressed in cervical intraepithelial neoplasia (CIN) and squamous cell carcinoma of the cervix using immunohistochemistry. HSP27 expression has been demonstrated in 47% of CIN1, 75% of CIN2, 92% of CIN3, and 100% of cervical squamous cell carcinomas (SCC); whereas parallel comparison study for p16 IHC detection demonstrated p16 expression in 47% of CIN1, 67% of CIN2, 92% of CIN3 and 75% of cervical squamous cell carcinoma. Positive staining for both HSP27 and p16 was observed in 6% of normal cervical tissues and in 19% of CIN1, 18% of CIN2, 85% of CIN3, and 75% of SCC specimens. When both anti-HSP27 and anti-p16 were assessed using IHC, both the sensitivity and specificity were improved.

Antibody Type	Mouse Monoclonal	**Clone**	G3.1
Isotype	IgG1	**Reactivity**	Paraffin, Frozen
Localization	Cytoplasmic	**Control**	Tonsil, Cervix, Prostate, Breast Carcinoma, Cervical Carcinoma
	Species Reactivity	Human, Rat, Dog, Mouse, Primate	

Presentation

HSP-27 is a mouse monoclonal antibody derived from cell culture supernatant that is concentrated, dialyzed, filter sterilized and diluted in buffer pH 7.5, containing BSA and sodium azide as a preservative.

Catalog No.	*Antibody Type*	*Dilution*	*Volume/Qty*
BSB 2950	Tinto Prediluted	Ready-to-Use	3.0 mL
BSB 2951	Tinto Prediluted	Ready-to-Use	7.0 mL
BSB 2952	Tinto Prediluted	Ready-to-Use	15.0 mL
BSB 2953	Concentrated	1:50 - 1:200	0.1 mL
BSB 2954	Concentrated	1:50 - 1:200	0.5 mL
BSB 2955	Concentrated	1:50 - 1:200	1.0 mL

Control Slides Available

Catalog No.	*Quantity*
BSB 2956	5 slides

Storage Store at 2-8°C (Control Slides: Store at 20-25°C)

Precautions

1. For professional users only. Results should be interpreted by a qualified medical professional.
2. This product contains <0.1% sodium azide (NaN_3) as a preservative. Ensure proper handling procedures are used with this reagent.
3. Always wear personal protective equipment such as laboratory coat, goggles and gloves when handling reagents.
4. Dispose of unused solution with copious amount of water.
5. Do not ingest reagent. If reagent is ingested, seek medical advice immediately.
6. Avoid contact with eyes. If contact occurs, flush with large quantities of water.
7. Follow safety precautions of the heating device used for epitope retrieval (TintoRetriever Pressure Cooker or similar).
8. For additional safety information refer to Safety Data Sheet for this product.
9. For complete recommendations for handling biological specimens, please refer to the CDC document, "Guidelines for Safe Work Practices in Human and Animal Medical Diagnostic Laboratories" (see References in this document).

Stability

This product is stable up to the expiration date on the product label. Do not use after expiration date listed on package label. Temperature fluctuations should be avoided. Store appropriately when not in use, and avoid prolonged exposure to room temperature conditions.

Specimen Preparation

Paraffin sections: The antibody can be used on formalin-fixed paraffin-embedded (FFPE) tissue sections. Ensure tissue undergoes appropriate fixation for best results. Pre-treatment of tissues with heat-induced epitope retrieval (HIER) is recommended using Bio SB ImmunoDNA Retriever with Citrate (BSB 0020-BSB 0023), ImmunoDNA Retriever with EDTA (BSB 0030-BSB 0033) or ImmunoDNA Digestor (BSB 0108-0112). See reverse side for complete protocol. Tissue should remain hydrated via use of Bio SB Immuno/DNA Washer solutions (BSB 0029 & BSB 0042).

Frozen sections and cell preparations: The antibody can be used for labeling acetone-fixed frozen sections and acetone-fixed cell preparations.

Staining Procedure

1. Cut and mount 3-5 micron formalin-fixed paraffin-embedded tissues on positively charged slides such as Bio SB Hydrophilic Plus Slides (BSB 7028).
2. Air dry for 2 hours at 58° C.
3. Deparaffinize, dehydrate and rehydrate tissues.
4. Subject tissues to heat induced epitope retrieval (HIER) using a suitable retrieval solution such as ImmunoDNA Retriever with Citrate (BSB 0020-BSB 0023) or EDTA (BSB 0030-BSB 0033).
5. Any of three heating methods may be used:

a. TintoRetriever Pressure Cooker or Equivalent

Place tissues/slides in a staining dish or coplin jar containing the ImmunoDNA Retriever with Citrate or EDTA, and place on trivet in the pressure cooker. Add 1-2 inches of distilled water to the pressure cooker and turn heat to high. Incubate for 15 minutes. Open and immediately transfer slides to room temperature.

b. TintoRetriever PT Module or Water Bath Method

Place tissues/slides in a pre-warmed staining dish or coplin jar containing the ImmunoDNA Retriever with Citrate or EDTA at 95°-99° C. Incubate for 30-60 minutes.

c. Conventional Steamer Method

Place tissues/slides in a pre-warmed staining dish or coplin jar containing the ImmunoDNA Retriever with Citrate or EDTA in a steamer, cover and steam for 30-60 minutes.

6. After heat treatment, transfer slides in ImmunoDNA Retriever with Citrate or EDTA to room temperature and let stand for 15-20 minutes.
7. For manual staining, perform antibody incubation at ambient temperature. For automated staining methods, perform antibody incubation according to instrument manufacturer's instructions.
8. Wash slides with ImmunoDNA washer or DI water.
9. Continue IHC staining protocol. Wash slides between each step with ImmunoDNA washer solution.

Abbreviated Immunohistochemical Protocol

Step	ImmunoDetector AP/HRP	PolyDetector AP/HRP	PolyDetector Plus HRP
Peroxidase/AP Blocker	5 min.	5 min.	5 min
Primary Antibody	30-60 min.	30-60 min.	30-60 min.
1st Step Detection	10 min.	30-45 min.	15 min.
2nd Step Detection	10 min.	Not Applicable	15 min.
Substrate-Chromogen	5-10 min.	5-10 min.	5-10 min.
Counterstain / Coverslip	Varies	Varies	Varies

Mounting Protocols

For detailed instructions using biodegradable permanent mounting media such as XyGreen PermaMounter (BSB 0169-0174) or organic solvent based resin such as PermaMounter (BSB 0094-0097), refer to PI0174 or PI0097.

Product Limitations

Due to inherent variability present in immunohistochemical procedures (including fixation time of tissues, dilution factor of antibody, retrieval method utilized and incubation time), optimal performance should be established through the use of positive and negative controls. Results should be interpreted by a qualified medical professional.

References

1. Carper SW, Rocheleau TA, Storm FK. cDNA sequence of a human heat shock protein HSP27". Nucleic Acids Research 1990; 18 (21): 6457.
2. Vargas-Roig LM, et al. Heat shock proteins and cell proliferation in human breast cancer biopsy samples. Cancer Detection and Prevention 1997; 21 (5): 441–51.
3. Voll EA, et al. Heat shock protein 27 regulates human prostate cancer cell motility and metastatic progression. Oncotarget 5 2014; (9).
4. Tozawa-Ono A, et al. Heat shock protein 27 and p16 immunohistochemistry in cervical intraepithelial neoplasia and squamous cell carcinoma. Human Cell. 2012; 25:24-28.
5. U.S. Department of Health and Human Services: Centers for Disease Control and Prevention. Guidelines for Safe Work Practices in Human and Animal Medical Diagnostic Laboratories. Supplement / Vol. 61, January 6, 2012.

Symbol Key / Légende des symboles/Erläuterung der Symbole

EC REP EMERGO EUROPE Prinsessegracht 20 2514 AP The Hague The Netherlands	Storage Temperature Limites de température Zulässiger Temperaturbereich	Manufacturer Fabricant Hersteller	REF Catalog Number Référence du catalogue Bestellnummer
IVD In Vitro Diagnostic Medical Device Dispositif médical de diagnostic in vitro In-Vitro-Diagnostikum	Read Instructions for Use Consulter les instructions d'utilisation Gebrauchsanweisung beachten	Expiration Date Utiliser jusque Verwendbar bis	LOT Lot Number Code du lot Chargenbezeichnung

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